CATS NEWSLETTER

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VOLUME 6
NUMBER 8

December, 1988

WE'RE IN THE CHIPS
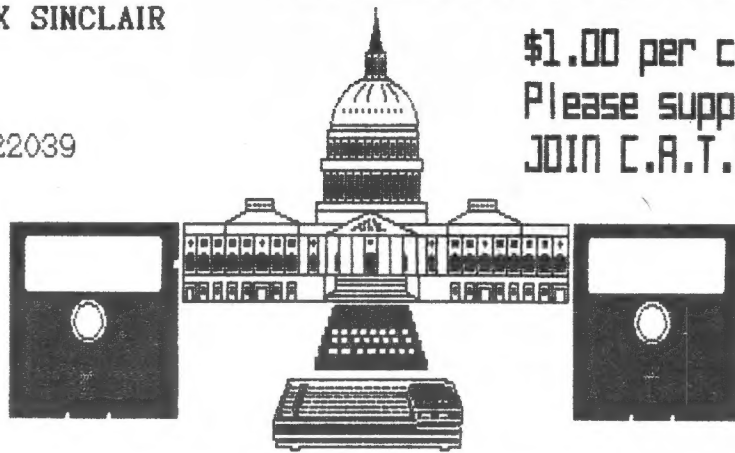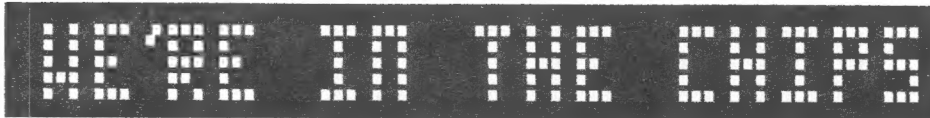
Uncle Clive's machine just keeps getting better!

IN THIS ISSUE

CONTRIBUTORS

Bill Barnhart   Vernon Smith
Hank Dickson   George Rey
Steve Greene   Mike Mitchell
John Riley   Mark Fisher
Bob Diggs   Pieter van Dijk
          Donald Lambert

PRESIDENTIAL RAMBLINGS

I have only a short ramblin' this month.

DECEMBER MEETING

Be sure and come to the meeting on the 10th. Lots of doings. There will be updates on the status of the Capital Fest - still plenty of things that you can do to get involved and on the band wagon! There'll also be an update on the status of how the CATS BBS is coming.

Most importantly, there will be the third annual (yes, it's a tradition by now) gift exchange hosted by none other than our own Hank Dickson. So be sure to bring a Sinclair gift - it's a great way to get rid of those old Sinclair or Timex/Sinclair items that you no longer use.

SEASONS GREETING

On behalf of the Executive Committee, I would like to wish you and yours a very merry Christmas and a prosperous and happy new year.

Bill

Best Wishes for a Merry Christmas
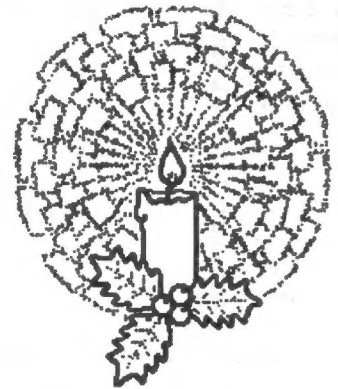
FROM THE EDITOR

This is my second "Holiday edition" and, as I did last year, I'd like to encourage you to attend the December meeting and the always popular gift exchange. Elsewhere in this issue you will find instructions on what's needed to participate. I guarantee that you'll have fun.

This issue will finally close some of the "to be continued" articles from past issues, namely Bob Diggs' packet radio article, Steve Greene's piece on telecomputing, and Mike Mitchell's RAMdisk program. While we closed those, we opened others, but I can't complain because it means that my cup runneth over. I've found out that a newsletter editor can never have too much material.

This issue sees the return of PAID advertising. Herb Bowers, Mr. ABBA Soft, is one of our out-of-town members and the author of several excellent commercial 2068 programs, including one on taxes which is advertised this issue. Please patronize our advertisers and when you do mention our name.

o ## The Chip Buy

They've been called a variety of things, "anti-rollover", "anti-bounce", and "keyboard controller" chips and now you can call them one other name, "HERE". Yes, that's right folks. WE ARE IN THE CHIPS! In the boxed area are the names of members and the number of chips they ordered. Each chip will cost $12.50. Please note: Those members that can't pick up their chips at the meeting and want them mailed to them, there is a $.50 charge per chip for mailing.

o ## QUANTA Library Update

Tom has asked me to publicize the fact that he has received the latest update to the QUANTA Library. If you want to update your copy, get to the hardware workshop and have about 6 blank formatted disks. Don't have any disks? Tom has them for $.25 each. The update to the library is the right price, free.

o ## Future Issues

As you can see from the various articles, we are starting to get into the BBS game. I think I have "convinced" Steve Greene to write a monthly column on the wonderful world of "modeming". As I've said before, this is the only area of personal computing that we've neglected but, going into it at this stage of our maturity, I believe we will be better able to overcome any obstacles that stand in our way. As we become more spread out in the Greater Metro area and beyond, we need to stay in touch. What better way than a BBS? If, in the future, we gain a capability for file up and down loads it will make the newsletter editor's job much easier.

o ## This issue

This issue has a wealth of information for you 2068 types. John Riley writes about his Larken system and Mark Fisher has three articles, a disk boot, 2068 to QL file transfers, and tape to AERCO disk. Steve Green has a quick tour of what to do when our BBS comes on line. Pieter van Dijk has another Z88 article, this time he explores the conversion of data in Basic. Finally, our annual instructions on the gift exchange. I certainly hope that there's a tin of fudge there this year!

An apology. Last month I mixed up Dick and Duane Parker. It won't happen again.

I hope you enjoy the issue. Happy Holidays.

Vernon

MEMBERS THAT ORDERED KEYBOARD CHIPS

Duane Parker (2)   Phil Barnhart (1)   Tom Bent (5)

Bill Barhart (2)   Tony Moore (2)

Ed Svendsen (1)   Ruth Fegley (1)

Hank Dickson (1)   Bob Howard (3)

Lloyd Lewis (1)   Cliff Watson (1)

Phil Russo (1)   Tim Acord (2)

Sheldon Gilbert (1)   Stan Guttenberg (1)

Herb Schaaf (1)   Lee Gayman (1)

Dick Parker (1)   Marinus Heuseveldt (1)

Barry Washington (1)   Mike Warmick (2)

Chips are $ 12.50 each. If mailing is required, add $ .50

Number inside () indicates number of chips ordered

DECEMBER MEETING AGENDA

11:00	Hardware Workshop
12:00	CYA Worksho
1:00	Lunch
2:00	General Meeting
2:45	Word Processing Review
	by Mark Fisher
3:30	Uncle Clive Gift Exchange
4:30	Adjourn

NEWSLETTER SUBMISSIONS

Submissions for the newsletter can be in hard copy, with *columns 2 1/4 inches wide* or, preferably, magnetic media. For the QL, microdrive cartridge, 5 1/4" DS/DD or Quad density disks, or 3 1/2" disks. For the ZX81, TS1000, or 2068, cassettes only, with titles on the box.

Send material to:

Editor, CATS Newsletter

Box 467

Fairfax Station, VA 22039

POTPOURRI

News Around the Beltway

UNCLE CLIVE'S CELEBRATION ARRIVES SATURDAY, DECEMBER 10

Yes, folks, the time has rolled around again for the Third Annual CATS' Sinclair Holiday Celebration. And it's something YOU can be a part of while making history, so to speak.

THE PROCEDURE

1. Participation is strictly voluntary.

2. If you want to participate, locate a piece of Sinclair-friendly software or hardware you think would make an appropriate gift for another Sinclair enthusiast. Or, any item intended for the general computer hobbiest would also be good. Something unique would probably be more valued than something extremely expensive.

3. Wrap the gift simply, omitting any identifying references.

4. Bring the gift to the CATS December meeting (12/10/88) and place it under the Holiday Tree.

5. Later, you and your colleagues will randomly select your new presents from all the unmarked gifts.

6. If, upon immediately opening your present you are unhappy with it, you can unilaterally exchange it with any of those which have been opened before you.

So begin right now going through your Sinclair-memorablia to pick out that one item which will make the holiday of another CATS member complete!

As one CATS person said to another, "Meet-cha at the tree!"

STEVE GREENE presented an excellent tutorial at the October CATS meeting on "telecomputing in the Sinclair world".

Prior to his presentation, Steve's thorough, readable article appeared in the October N/L, setting the stage for his discussion on telecomputing.

At the meeting, Steve presented some of the results of a study he carried out regarding a BBS (bulletin board system) for CATS.

CATS Bulletin Board to Blast Off in January

His findings and recommendations:

1. The majority of CATS members are in the DC dialing area, in MD.

2. Prior surveys have shown that 1/3 to 1/2 of the CATS membership has had a modem at one time or another.

3. A BBS for CATS should have a number in the DC dialing area, preferably in suburban MD.

4. The BBS should start with donated equipment, such as: 2068 computer, 1200 baud modem, and a serial interface.

5. Moderately-priced communications software should be obtained for initial operations. There are a number of such packages available for T/S machines.

6. A telephone line which can be dedicated 100% to the BBS is needed. Hopefully, this important item might also be donated.

The CATS Executive Committee later took up Steve's proposal, and voted to set aside $200 to implement it right away. It was decided to have a trial period of six months, or roughly until the Computer

CYA Workshop

The Leeb model to monitor economic trends as a CYA tool for identifying secular trends of various markets is nearly done. A modified measure of inflation I propose is to use the CPI or PPI, whichever the greater at the time, in lieu of the PPI alone as proposed by Leeb, as the measure of inflation. I also expect to use M2, unadjusted for velocity, for monitoring the money supply, real GNP growth, an index of the dollar's trade-weighted exchange rate, and the S&P 500 index for stock. Together we should be able to get our data base done by the Jan meeting.

I will give my review of Ravi Batra's latest CYA Handbook "Surviving the Great Depression of 1990" and contrast it to what we are doing and the Leeb approach. Herb Schaff will give us his impression of Batra's last year's best seller "The Great Depression of 1990", and Mannie Quintero will likewise give views on another "expert" (Martin D. Weiss) CYA book and CYA strategy for coping with the near future.

NOTICE:

Bob Warner has a Tecnical Manual for the AMDISK -III 3" disk drive. He is passing it around for us to review or copy. George Rey has it now and will pass it on at the Dec meeting.

George also would like to resell, at his cost, two 3 1/2" drives he got from Tom Bent's group buy.

QL on the QT by Vernon Smith

When I first started writing this column, I said that I was no computer "guru". I am applications oriented so I wanted to comment on the QL world from the viewpoint of the ordinary user. I may be a little more knowledgeable than the ordinary (casual) user; however, this only reinforces my basic philosophy about software. If I can't quickly master a new program and the one I'm using is adequate, I will quickly discard it and go back to the old friend.

□ text87

A case in point is text87, the new word processor that "everyone in the know" says is the best word processor for the QL. In terms of features, I would tend to agree. It has the ability to print in multiple columns and can have up to 64 different setups for margins and tabs. If you buy 24-88, the special printer driver package, it includes drivers for 24 pin printers and the Epson laser. I really like the smaller type size used on their default screen font. It is very easy to read. Moving around a text87 document is a breeze and a great deal faster than Quill. Future offerings from Software87, the producer of text87, will have the ability to combine text and graphics. With all of this said, do I like the program? No. Not now. Later, maybe I will, but only if some fundamental changes are made.

□ Docs? What docs?

Let me tell you why I rate it as I do. First, second, and probably, last, the documentation stinks. I'm not one who has the knack for using a program correctly without ever reading the user guide. I would bet that the manual for text87 was written by the software developers, which is probably inevitable, but they failed to write it so we, who aren't intimately familiar with the program, could understand it. They aren't alone as this is rather common in the computer world and would be so easy to overcome. How? Take a person completely divorced from the development of the software, hand him the manual and a manuscript or raw text file, and ask him to produce a finished document. In the case of text87, anyone would be hard pressed to make anything out of the mess masquerading as a manual.

Want specifics? Try this. One of the highly touted features is the ability to mix characters of different typeface and size on the same line and to use different screen display founts and colors to represent them. This entire operation of attaching screen fonts and then getting them to print out correctly escapes me. Don't look to the manual for help. It won't. In reviewing the fonts list, they show 3 sizes of Courier (10, 12, and 15), Souvenir 10, Superfocus 10, OCR B 10, and Proportional but I haven't been able to get them to print out. Each of the fonts appears in the list with various combinations of DW, SH, DH, SW, IT, and CO. Try to find the explanation for these symbols, which I assume stand for Double Width, Standard Height, Double Height, Standard Width, Italics, and Compressed. You can't. Furthermore, none of these font designations appear in the directory since the screen fonts are listed as ql10, default11, and Roman14, 16, and 21. QUANTA has had several letters on text87 but neither explained "attachment" in great detail. No doubt I'm not getting something, but that's just it. I'm willing to break away from Quill and learn something new but I shouldn't have to have a degree in computer science and be imbued with ESP to understand the instructions. A few more comments about the program. I doesn't have on-screen help and it has several commands that aren't implemented (but are "included for consistency of user interface"(?)). Why put them in at all? Flaky! From an aesthetic point of view, the screen isn't very pleasing to the eye. I'll admit that with only 4 colors you aren't given much to work with, but text87 shows no imagination at all.

All in all, this program, with the printer driver package, fonted87, costs nearly $100.00. Quite candidly, that's pretty pricey for what you get or more accurately, don't get. When you see what the same amount will get you on other machines, IBM, Atari, Amiga, and Apple, you will realize that text87 needs to go back to the drawing board for some major program enhancements and a complete rewrite of the documentation.

□ What's new?

So, what else is going on in QL land? Sharp's is now stocking a scanner for $239, evidentially very similar to the $149 Pictascan unit for the ST sold by E. Arthur Brown. It has a scanning unit which attaches to your printer's printhead. Maybe we can get a demo of this in the near future. It certainly would open up new graphic horizons, considering that Digital Precision is getting ready to release a major upgrade of their Desktop Publisher program, which they claim is better than Ventura or Aldus Pagemaker! Humm! I'll wait and see. Miracle Systems continues to turn out the goodies. Earlier this year they finished work on the MIDI and now they are bringing out a hard disk interface. Be still my beating heart! I talked with them and they said the release date would be "around the first of the year". They are planning to sell a complete unit consisting of a controller and a 20 or 30 Mb RLL disk. At the present time they do not anticipate selling the controller separately; however, I pointed out that here hard disks are very cheap and that US buyers would certainly want that option. Additionally, they are powering the unit with a 50 watt power supply that is only capable of running one disk, while most hard disk setups over here have 64 watt power supplies and can run 2 drives. Let's hope that they recognize that not all of the world runs on 220v/50hz by selling the controller apart from the entire unit. If you feel as I do, why not write them. (Miracle Systems, NBC, Dean Road, Yate, Bristol, BS17 5NH) Due to increases in RAM chips they have stopped production of the 512K ExpanderRAM and the Trump Card price has nearly doubled.

Not much else. I'm still awaiting the QL emulator for my Atari ST and hoping for a peek at the new Desktop Publisher.

MORE FUN WITH THE LARKEN DISK DRIVE SYSTEM

by John Riley

It has now been almost a year since I initially purchased the Larken Cartridge that, along with a small switch added to the NMI line of my Aerco Disk Interface, allowed me to enter the world of LKDOS. The main thing LKDOS had that Aerco-DOS didn't, if you'll remember, was Spectrum compatibility. Large amounts of Spectrum software languished on cassette, and I wanted it on disk! Unfortunately, I have had very little time until recently to explore LKDOS. But then fate stepped in and zapped me with a flu bug that knocked me out of work. On the second day of my illness I recovered enough strength to prop myself up to the 2068 and tap away. Some public domain Spectrum software went into disk form very easily (more on this later), but then I ran into a major problem -- the copy-protection schemes of my commercial Spectrum software! It seems that software piracy is a big-time problem in the U.K., and the writers over there deal with it by using nefarious non-standard loading routines on the cassettes. Programs like Trans-Express were published for microdrive users in England, but American disk users are left in the cold! Larken Electronics provides a partial solution by including a circuit schematic in the documentation for LKDOS that allows you to add a "snapshot save" pushbutton to the NMI line of the Aerco board, and that will certainly do the trick with games and such. But unless I can find a way to mess with the machine code routines of the programs

with file handling ("LOAD" and "SAVE") features, I will still be dependent upon cassettes for file storage. RATS! Well, maybe someday I'll get around to working on that little detail..... The good news is that when programmers are not intentionally messing up the user's

BASIC commands for cassette storage. After turning on the 2068 with the LKDOS cartridge plugged in, the machine initializes as normal, either to 2068 or Spectrum mode, depending on how the Romswitch is set. Then two commands from the keyboard turn on the cartridge - RANDOMIZE USR 100: OPEN #4,"dd". From that point on, the command PRINT #4 preceding any other file-handling statement will activate the disk system. Some possibilities are:

PRINT #4: SAVE "xxxxxx.B1" LINE 1 — BASIC program

PRINT #4: SAVE "xxxxxx.C1" CODE start, length — an M/C program

PRINT #4: SAVE "xxxxxx.C1" SCREEN$ - screen save

PRINT #4: SAVE "xxxxxx.A1" DATA () - numeric array

PRINT #4: SAVE "xxxxxx.A$" DATA$ ()-string array Loading is accomplished in the same manner, using the command LOAD in the place of SAVE. Other commands supported by LKDOS include LOAD, MERGE, CAT (used to CATalog a disk, not load a program, as in Aerco -- wildcard searches supported), ERASE, GOTO (used to select a particular drive), PRINT (files displayed directly to the screen or printer without passing through memory), and VERIFY. FORMAT and MOVE are supplied as RAM-resident programs, rather than being ROM-based, as in Aerco. In addition there are nine new graphics and windowing commands implemented, and on-board ramdisking (up to four if you have the 256K RAM upgrade on your Aerco board). You will

	AERCO	LARKEN
Spectrum compatibility?	No	Yes
Syntax	Moderately difficult	Fairly easy
User support by mfg	Good	Good
CP/M compatibility?	Yes	No
Cost and available configurations	$ 199	$ 125
	Basic system with 64K onboard RAM	Basic system with Kempston joystick interface and NMI "snapshot" save
	Bare board and EPROM have been made available in the past as a kit, but no instructions for assembly were included. Cost: $ 60	LKDOS cartridge $ 70—available for AERCO, Ramex, and Oliger. AERCO cartridge has built-in RAM-disk capability.
Options	CP/M, upgrade RAM to 256K	Instructions provided to add NMI to AERCO board, Spectrum ROM or LROS chip can be added, internal RAM-disking for 2068

COMPARISON OF AERCO AND LARKEN DISK SYSTEMS

attempts to use disk storage, transference is rather easy. The LKDOS syntax was designed to stay close to Timex' original

To be concluded next month

CONVERSION OF DATA IN BASIC ON THE Z88. By Pieter van Dijk

If numerical data is printed from a BASIC program to a file, the data is tokenised and cannot be read with a wordprocessor. If you want to have readable data (ASCII), you have to print the data to a file, using PRINT#c,STR$(x) where x is a numerical variable. The file created with this method however, will be larger and loads a lot slower than a tokenised file. The ASCII file on the other hand can be sent through the SER port. The following program changes a tokenised file into an ASCII file that can be read and modified with a wordprocessor. The opposite conversion can also be done

10 CLS:PRINT TAB(20,2):"1) TO TEXT FILE"

20 INPUT TAB(20);"2) TO CODED FILE":inp%

30 INPUT TAB(20);"FILE NAME ":inp$

40 IF inp%=1 in$=inp$:out$=in$+".txt"

50 IF inp%=2 in$=inp$+".txt":out$=inp$

60 c%=OPENIN(in$):d%=OPENOUT(out$)

70 IF inp%=2 GOTO 120

80 REPEAT

90 INPUT#c%,in%:PRINT#d%,STR$(in%)

100 PRINT TAB(40,6):in%

110 UNTIL EOF#c%

120 GOTO 160

130 REPEAT

140 INPUT#c%,in$:out%=VAL(in$):PRINT#d% ,out%

150 PRINT TAB(40,6):out%

160 UNTIL EOF#c%

170 CLOSE#c%:CLOSE#d%:END

Lines 100 and 150 print the data to the screen so that you can see that something is happening. They can be removed without affecting the program. When converting to ASCII, the extension .txt is added to the file name by the program. When using the program in the opposite direction the extension does not have to be input.

CATS BBS Info--Continued from Page 3

Fest is completed in May.

The committee believed the BBS would be useful to N/L Editor Vern Smith in transferring copy to him more easily. It was felt the Fest could also benefit from the availability of a BBS, especially for out-of-town publicity.

Mark Fisher and Steve Greene are now working to get the CATS BBS operational for Beta testing during December.

When the first critical element--a telephone line--is either donated or installed and the software is happily functioning, they will spread the word of the new number through all of CATS-dom, primarily through the N/L.

Also, at the January meeting, there will be a review of how the BBS works with the particular software Steve and Mark have selected.

In addition, there will be extra copies of Steve's detailed proposal to the Executive Committee as well as copies of his October handouts:

.Ingredients for T/S Telecomputing

Remote BBS Supporting T/S Computers .

Log of a Session with the Boston Computer Society's BBS

QL 'n Packet-Cont. from November

```
QLTerm
    Monitor needed
    Use 1200 baud
    Displays information faster than I
    can read it
    Use <CNTRL-H> for delete/backspace
    Has a file capability
    No screen dump
    Won't go to QL programs after you
    quit

Mike_term
    Monitor or change window for TV
    Displays information at a
    comfortable speed
    Use <CNTRL-H> for delete/backspace
    Use <CNTRL-X> to cancel line
    No curser
    No file capability
    No screen dump
    Goes to superbasic with no
    problem
    Loads quick and easy to use

Other
    I tried two other programs (Qcode
and Qlink) without success. The
copies I borrowed may be bad. I will
try to learn more about them and
report later if I have any success
with these or any other programs.
```

QUICK GUIDE TO USING THE CATS BBS

1. Capabilities of the CATS BBS will be:

Full access to first-time callers. Passwords will not be required, at least initially.

A general interest bulletin (in addition to the "welcome" message seen by every caller).

A 25K-bytes message area, accessible to all callers. Messages may be read or entered by any caller. Only the sysop will be able to delete messages. Messages will be limited to a maximum length of 2K-bytes (2048 characters and spaces). Old messages will automatically "fall off" as the message buffer fills up.

The Cassboard BBS software does not support file transfers. Short articles and programs can be uploaded as one or more messages. Download them by capturing the text to your communications program's message buffer or by printing it out as it is sent by the BBS.

2. First Time Use of CATS BBS:

You will need: a computer, a communications program, and a modem connected to a telephone line.

Set the parameters for the communications program and modem to operate at 300 baud, 8 bit word length, 1 stop bit, no parity (8/1/n).

Dial the BBS. For Hayes-compatible modems, the command is: ATDT <BBS phone number> <RETURN>

Include any access codes, "1", or area codes you need to dial the BBS within the <BBS number> part of the command. Monitor the call's progress with the modem's speaker, indicator lights, or a telephone set in parallel with the modem. If you use a telephone set, hang it up after you here the BBS modem's tones.

After the BBS "welcome screen", enter your name or the user identification you'll use (on one line), followed by <RETURN>. The BBS will display its main menu.

Use the <T>oggle Line Feed and <A>djust Screen Width commands as necessary for your computer's display.

Q! BOOT That Disk! For the 2068 AERCO System. by Mark Fisher

Here's a little program that'll make it much easier to load programs from your AERCO disks. Rather than laboriously typing the peculiar AERCO syntax, this program will allow you to select the desired program from the directory, and LOAD it by merely pressing ENTER. As written, it will LOAD only BASIC programs, as specialized files are usually LOADed by their specific programs. A copy of this program on each disk will allow you to select the program you need as soon as you turn the system on. In dealing with disks that contain a variety of programs, it might help to add a line that re-LOADs the boot program at the termination of each program. Operation Operation is straight foreward. The program variables are set up, screen prepared, and a CAT"", command reads the disk (lines 0-150). The selected program is indicated with a highlight block. This block can be moved around with the cursor keys (lines 200-300). When the desired program is selected, pressing ENTER moves to "getit" (lines 400 -). Here, the program name is read off the screen using SCREEN$, and built up in p$. As the program is read, it is printed at the top of the screen, to assist you if there are any problems in LOADing the program. The ".BAS" extension is added to p$ by the program, before the CAT "p$", command LOADs the program.

10 REM ***** General BOOT *****

20 REM attempt 5

30 REM by Mark Fisher

40 REM 1988

50 LET menu=200

60 LET getit=400

70 LET loadit=500

80 LET r$="" : REM response$ from keyboard

90 LET s$="" : REM screen$ to build p$

100 LET p$="" : REM program$ used TO THEN LOAD selected program

110 LET l=5 : LET c=0 : REM line & column for cursor position

120 LET c$=" " : REM cursor$ to

highlight selection

130 INK 7 : PAPER 0 : BORDER 0 : CLS

140 CAT "",

150 BORDER 2 : PRINT #0;AT 0,0;"Use <v`> (5678) to select prog. <ENT> TO THEN LOAD program " : BORDER 0

200 REM **** Menu Loop ****

210 OVER 1 : INVERSE 1 : PRINT AT l,16*c;c$: OVER 0 : INVERSE 0

220 PAUSE 0 : LET r$=INKEY$

230 IF CODE r$=13 THEN GO TO getit

240 IF r$<"5" OR r$>"8" THEN GO TO menu

250 OVER 1 : INVERSE 1 : PRINT AT l,16*c;c$: OVER 0 : INVERSE 0

260 LET l=l+(r$="6")-(r$="7")

270 IF r$="6" AND SCREEN$ (l,16*c+1)=" " THEN LET l=5 : LET c=NOT c

280 IF l=4 THEN LET l=5 : LET c=NOT c

290 IF r$="8" OR r$="5" THEN LET c=NOT c

300 GO TO menu

400 REM **** getit - build program name *****

410 PRINT AT 0,0;TAB 31;TAB 31;AT 0,4;"Loading ";: REM CLEAR top 2 lines

420 FOR i=c*16+1 TO c*16+16

430 LET s$=SCREEN$ (l,i)

440 IF s$="." THEN GO TO loadit

450 PRINT s$;

460 LET p$=p$+s$

470 NEXT i

500 REM **** loadit finally! ****

510 LET p$=p$+".BAS"",

520 CAT "p$",

8999 STOP

9900 OUT 244,1 : MOVE "BOOT.BAS",1

Transferring Files:

2068 to QL Volume 1

by Mark Fisher

I've been doing a mild but steady business in porting text between the QL and the 2068, over the past months. Others have approached me, asking me how I do it... So, here's the secret of my success: It's not very complicated, actually. I send the information between the machines using the RS232 protocol. This requires certain specific hardware and software for each machine, but it's not difficult to arrange. I'll discuss these requirements below. Hardware: The first need is a circuit that can make sense of the 8mhz buzz inside your machine, and send out an orderly signal that can be recognized by a matching circuit on the target machine. This circuit is the (in)famous RS232 port you've heard tell of. For the 2068 the port is composed of the Zebra RS232 add-on board and the Timex MODEM. (The add-on board's not available anymore, but the circuit is simple, and more or less in the public domain.) The Timex MODEM boards are still available from Ed Grey Enterprises, and the combination produces a reliable 1200 baud signal for the QL. The output from the 2068 goes straight into the QL's serial port. A cable runs straight from one port to the other, with matched lines: TX to RX, CTS to DTR, etc. Setting up the cable is the hardest part of the sequence, frankly. There's a tortured discussion of what the RS232 standard implies in the Concepts section of the QL manual that may be of help. Don't forget your fellow club members if you need help. Software: QL: On its end, the QL catches the flow with a copy of QLINK v.1.556 from Harvey Taylor: a good, flexible terminal program. A simple "COPY ser2 to flp1_text" command will do the job, but you won't get to see what's coming in. 2068: Pitching for the 2068, one could use MTERM II, BUT: MTERM II uses the program area as its data buffer. It works fine to RECIEVE text, with the machine code tending to the 2068 operation. However, If you want to SEND text, you'll need to expand the buffer area before you put your document

in it (a pain). AND: It works only at 300 BAUD. The solution is the following program: it allows transmission at 1200 BAUD, and more or less automates the transmission process. As written below, it will only transfer ASCII files, and cannot expand BASIC tokens to port program listings over. THAT improvement will be discussed in next month's article. A number of lines are written for the AERCO disk system, but users of other DOS's or the native Timex tape system should find the needed lines easy to change. A note on the listing. The program that expands and ports the 2068 BASIC to the QL offers the option of showing multiple statement lines spread in separate lines. I think it makes for a more readable listing. The core of this program is based on the simple port test program enclosed with the Zebra RS232 adaptor board.

```
10 REM Filtrans, by Mark Fisher, 1988

20 PAPER 0 : INK 7 : BORDER 0 : CLS

30 OUT 119,0 : REM zero clears UART

40 OUT 119,BIN 01000000 : REM UART reset (command preface)

50 OUT 119,BIN 01001110 : REM UART MODE command : set to 1200b, 8 bits, no pairity

60 REM "01"=1 stop bit;'11'=2 +"0" =even pairity;'1'= odd +"0" =no pairity check +"11"=8 bit words;'10'=7 bit +"10"=clock/16;01=/1;11=/64

70 OUT 119,BIN 00110111 : REM UART COMMAND byte : enable transmit & recieve

80 REM "0"=EH - not used ???? "0"=no RESET "1"=RTS pin 23 low "1"=ER reset error flag "0"=no send BREAK "1"=Rec. enable "1"=DTR pin 24 low "1"=Tx Enable

90 REM Each byte sent OUT 115 will leave on the Transmit line of the RS-232 port.

200 REM ******fil trans *************

210 CLEAR 40000

220 CAT "", : INPUT "Load what file? (name & length )";f$,len : REM length is
```

arbitrary - just make it long enough

```
230 LET f$=f$+".bin"",40000" : CAT "f$",

300 FOR i=40000 TO 40000+len

310 LET a$=CHR$ PEEK i : PRINT a$;

320 POKE 23692,2 330 OUT 115,PEEK i

340 NEXT i

350 OUT 115,26

360 INPUT "Repeat transfer or new file? (r/n)";f$

370 IF f$<>"r" AND f$<>"n" THEN GO TO 370

380 IF f$="r" THEN GO TO 300

390 GO TO 200
```

Tape to AERCO Disk
by Mark Fisher

Supervisory help by John Riley

(The following material should not be considered the last word on this subject. My experience is limited to conversions to the AERCO disk system. Other systems, including Oliger, Larken, Ramex, Timex Portugal, ad infinitum present similar challenges. If you have experience with one of these systems, please write it up!) If you have tried to use a disk drive with the 2068, you have run into a little problem, known as what to do to make a tape to disk transfer. The operating system of the 2068 was designed around cassette tape mass storage. Naturally, most programs that were developed for it also used the keywords and syntax the tape SAVEing routines demanded. Unfortunately, the designers of disk operating systems had to fit them around the existing Timex command structure. This led them into design choices that I hope they would not have taken otherwise. Briefly, AERCO uses four existing, but un-implemented keywords for user control of the disks: CAT = Displays a disk directory or LOADs a file from the disk MOVE = SAVEs a file to the disk ERASE= clears a file from the disk FORMAT Prepares a disk for use The

short course says that all you have to do is LIST your tape loaded program, and replace each SAVE with MOVE, and each LOAD with CAT. Unfortunately, that won't work. AERCO's syntax is a little different from Timex's. The Sequence First, you merely LIST your taped program. At times, that may be difficult. There are two problems that may come up. 1) How do I list it? Some programs autorun after LOADing, and immediately lock themselves from stoppage. Since there must be at least a minimal BASIC program for each application, it should be possible to derail the autorun by using MERGE "". instead of LOAD. At times the BASIC header program will be partly or completely invisible, due to embedded INK commands. Try entering the direct command INK 0 and then try listing again. If that doesn't work then LLISTing them or pulling them up to the editing area will let you inspect such programs. 2) Machine code. The operative questions that you must be able to answer are how long is it, and where is it stored. By inspecting the BASIC portion of the program, you can often find the line used to save the machine code. If that SAVE was made from a direct command, a record will not exist. Then you will have to use a "Header Program" to find these answers. A very good header-reader program can be found in the CATS 2068 Public Domain Library, or the "CAT" option from MSCRIPT. Machine code can be loaded into your computer independently of the BASIC portion with the command LOAD "" CODE. After LISTing you program, you'll have to start changing the lines in which the program addresses the storage device, switching it from cassette to disk. If you are lucky this acces will always be through the BASIC component. Access to machine cod that SAVEd the program - ideally you will be converting the program to operate through the disk system. Thus, you will change all lines that infer a tape system to AERCO compatible commands. If you find: Replace it with: SAVE "quizzle" MOVE "quizzle.bas", SAVE "quizzle" LINE 20 MOVE "quizzle.bas",20 SAVE "quizzle" SCREEN$ MOVE "quizzle.scr", SAVE "quizzle" CODE 40000,30 MOVE "quizzle.bin",40000,30 LOAD "quizzle" CAT

"quizzle.bin", LOAD "quizzle" LINE 20 CAT "quizzle.bas",20 More complex changes LOAD "" CAT "quizzle.bas" All AERCO commands must contain a specific name. LET q$="quizzle": SAVE q$ LET q$="qizzle.bas""",": MOVE "q$", Note the exact sequence of commas and quote image characters - this is important. SAVE "quizzle" DATA (q))I don't know: MOVE "quizzle.var", SAVE "quizzle" DATA (q$)) saves all variables VERIFY "quizzle")Not supported by AERCO MERGE "quizzle")Not supported by AERCO , but needed! Thirdly, MOVEing the program to disk. If you've changed all SAVEs in the program, you have probably found the line that saves the program. If not, you'll have to add one, or you can use direct commands from the keyboard to make the transfer. Thus, if you have a program "Sample" that autoruns from line 5 and has a M/C component that starts at 33000 and is 4000 bytes long, y 9999 OUT 244,1: MOVE "Sample.bas",5: MOVE "Sample.bin",33000,4000 The direct command GOTO 9999 will then save the program to disk. Alternatively, you can simply enter those same commands directly from the keyboard. Either way, you should end up with "Sample.bas" and Sample.bin" listed on your disk directory (accessed Many machine code programs fiddle with the configuration of the machine, leaving AERCO dos switched off. Adding an OUT 244,1 command switches the AERCO dos on. Such a line at the start of your AERCO MOVE or CAT lines is useful insurance. Because of the variety of approaches and attempts to provide copy protection for programs, you may have difficulty getting the disk version to run correctly. Solving these problems requires that you learn the strategy used in each case, and come up with a way to defeat it. Sounds like another article!
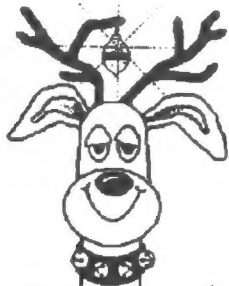
MODIFICATIONS TO THE AUGUST 1988 ARTICLE "DRIVING A MONITOR" WRITTEN BY MARK FISHER—Submitted by Donald Lambert

The article lists a 2N 222 transistor for which I found no listing so I used a 2N 2222A with no problems.

I started to put the circuitry inside the modulator but when I tried to drill holes I found it too easy to damage the capacitors when the drill broke through. I had already put the circuit on a small piece of perf board and was using the hole in the snap-on lid of the TS1000 modulator. I looked for a small box to mount the circuit in and my search led me to the TS1000 transfer switch box that came with the computer. It had the RCA jack already mounted. See sketch.

Here are the steps you will need to take:
1. Remove the foam sticky tape from the snap-on bottom. This will be the lid when the case is done.

2. Remove the lid, unsolder, and remove all components EXCEPT the RCA jack. Drill out the two rivets to remove the switch.

3. Measure 1.156" (1 5/32") from the end with the RCA jack and mark the 2 sides of the box. On the portion of the box, now the bottom, that has the slot where the switch was, measure 1.937" (1 15/16") from the RCA jack end.

4. Now using a nibbling tool (Radio Shack), carefully cut the box like the sketch. File all sharp edges smooth.

5. Fit the lid on the cut down box and mark where to cut the side lips. Mark .156" (5/32") longer for the lip to be broken down. File smooth.

6. Mark the bend line on the inside of the box. Using pliers with wide jaws, grip the lip to be bent with the tip of the jaws on the bend line. Bending a little at a time, work across the box until the bend is 90 degrees.

7. Put the lid on the box and mark the bend line. With pliers, bend the lip down and test fit it on the box.
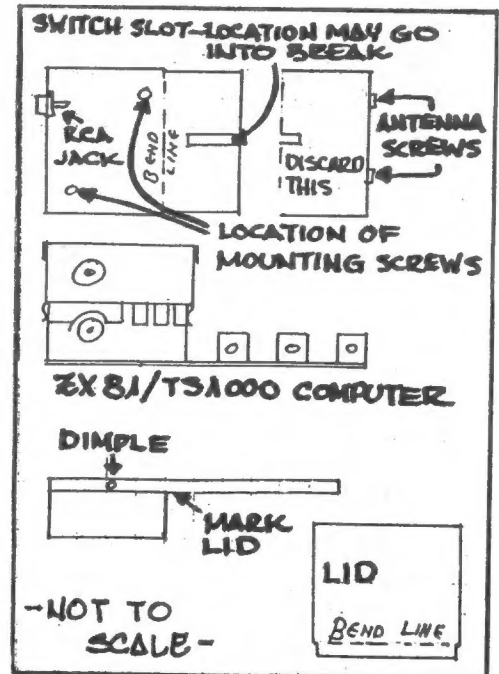
8. Drill holes for the screws. 4-40 machine screws are ideal. Remove the cover from the TS1000 modulator and sit the box on top of the modulator cover with the RCA jack directly above the radius notch on the modulator cover. Center the box and mark and drill two holes through the box and cover. It works best of one hole is drilled undersized in the box bottom first and then from that through the cover. Size the hole and put the screw with the head where it will be in the TS1000 modulator. Align and tighten the box and mounting cover, then drill the other hole. I did not use the existing hole because it was too big.

9. If you have access to a piece of 1/8" thick foam, cut it to fit the bottom of the box and thus help to insulate the circuitry.

10. Press the modulator lid on and solder the 3 connections (per the prior article). Make sure that the circuit will not touch anything. Consider using heat shrink tubing for insulation. Press on the modified box's cover and enjoy
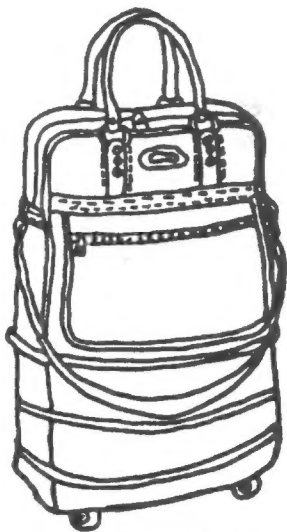
Now you can use a transfer switch for regular TV output from the bottom RCA jack or plug into the upper one for monitor output. It works beautifully with a 12" green screen Zenith Data Systems monitor. True, you cannot put the computer board into an unmodified case, but I use my ZX81/TS1000 mounted on a board per the article in CTM, August 1987, "The Ultimate ZX81/TS1000" by Walter Komlosy.

SWITCH SLOT-LOCATION MAY GO INTO BREAK

RCA JACK — ANTENNA SCREWS — DISCARD THIS

LOCATION OF MOUNTING SCREWS

ZX 81/TS1000 COMPUTER

DIMPLE — MARK LID

LID — BEND LINE

—NOT TO SCALE—

```
10050 DATA " 74 C0 04 87 60 00 01 DA 61 00 01 BE 66 26 38 19 5B 44 63 1E 0C 44 "
10060 DATA " 00 29 62 18 20 3C DF DF DF FF C0 99 90 2A 00 14 B0 AB 00 3E 66 06 "
10070 DATA " 0C 19 00 5F 67 04 70 F4 4E 75 4B E8 00 68 2E 09 3A 28 00 1E 42 68 "
10080 DATA " 00 1E 52 68 00 1E 70 47 74 40 43 E8 00 58 61 4A 67 08 0C 40 FF F6 "
10090 DATA " 67 14 60 0C 36 04 22 47 61 00 03 E2 66 DE 70 F8 31 45 00 1E 4E 75 "
10100 DATA " 45 E8 00 58 70 12 42 62 51 C8 FF FC 22 4A 2A 47 34 C4 14 DD 53 44 "
10110 DATA " 6E FA 31 45 00 1E 72 0E 74 26 1F 28 00 2C 61 06 11 5F 00 2C 4E 75 "
10120 DATA " 70 FF 48 E7 BF 0C 4C D7 00 05 76 01 61 0E 52 80 67 F4 53 80 58 8F "
10130 DATA " 4C DF 30 FC 4E 75 1C 28 00 1D 61 00 04 4A 4A 80 6D 00 00 BA 0C 00 "
10140 DATA " 00 40 65 00 01 12 0C 00 00 4B 62 22 D0 40 30 3B 00 86 4E FB 00 02 "
10150 DATA " 00 1C 00 1C 00 20 00 24 00 18 00 66 00 A4 00 86 FF 1A 00 82 FF 2C "
10160 DATA " 03 96 70 F1 4E 75 70 00 4E 75 70 00 60 14 70 00 24 28 00 20 EF 4A "
10170 DATA " EE 8A 04 82 00 00 00 40 D2 82 69 1A 24 01 6B 20 06 82 00 00 00 40 "
10180 DATA " 69 0E ED 82 69 0A D4 82 EE 4A B4 A8 00 24 6F 0E 72 00 24 28 00 24 "
10190 DATA " 70 F6 60 CE 74 40 72 00 21 42 00 20 4E 75 20 3C 52 41 4D 30 D0 2A "
10200 DATA " 00 14 22 C0 22 FC 5F 20 20 20 32 FC 20 20 22 14 70 00 4E 75 70 07 "
10210 DATA " 60 7E 7A 03 0C 42 00 40 6E 0E 2F 09 61 16 24 5F 04 92 00 00 00 40 "
10220 DATA " 4E 75 70 FC 4E 75 7A 07 60 06 7A 07 74 0E 72 00 78 00 38 28 00 1E "
10230 DATA " 67 00 FF 66 3F 04 2F 28 00 24 2F 28 00 20 42 68 00 1E 21 6C 00 04 "
10240 DATA " 00 24 53 44 ED 8C D2 84 2F 02 61 00 FF 66 24 1F 20 05 72 00 61 24 "
10250 DATA " 21 5F 00 20 21 5F 00 24 31 5F 00 1E 4A 80 4E 75 16 28 00 1C 53 03 "
10260 DATA " 67 08 57 03 67 04 B0 00 4E 75 70 EC 4E 75 48 C1 48 C2 0C 00 00 07 "
10270 DATA " 62 00 FF 0E 7E 00 4A 83 6C 02 9E 81 59 00 67 00 FF 00 6D 10 61 CE "
10280 DATA " 66 DE 76 FF 55 00 67 00 FE F2 6D 22 6B 10 76 00 58 00 67 1A 76 0A "
10290 DATA " 55 00 67 04 6D 10 E1 4B DE 89 2F 07 DB 82 61 18 22 09 92 9F 4E 75 "
10300 DATA " E1 4B 2F 01 43 EF 00 03 2E 09 52 87 61 04 22 1F 4E 75 2A 28 00 1E "
10310 DATA " 28 28 00 20 B8 A8 00 24 6D 0E 6E 04 4A 03 6D 04 70 F6 4E 75 4A 44 "
10320 DATA " 67 08 61 00 00 A0 66 F4 60 0C BE 89 63 00 00 8A 61 00 00 A8 66 B6 "
10330 DATA " 4A 43 67 7E 20 0D 90 8C 51 80 EF 88 4B F4 08 08 30 2C 00 02 E5 48 "
10340 DATA " DA C0 DA C4 4A 43 6E 26 BE 89 63 12 1A D9 52 44 08 04 00 09 67 F2 "
10350 DATA " 52 45 06 84 00 00 FE 00 50 E8 00 2C B8 A8 00 24 6D 2C 21 44 00 24 "
10360 DATA " 60 26 70 00 BE 89 63 20 B8 A8 00 24 6C 36 10 1D 12 C0 B6 40 66 02 "
10370 DATA " 2E 09 52 44 08 04 00 09 67 E4 52 45 06 84 00 00 FE 00 21 44 00 20 "
10380 DATA " BE 89 62 00 FF 5E 0C 43 00 0A 66 08 B6 00 67 04 70 FB 4E 75 70 00 "
10390 DATA " 4E 75 21 44 00 20 60 00 FF 58 4B EC 00 08 32 2C 00 02 53 41 70 F0 "
10400 DATA " BA 9D 57 C9 FF FC 59 8D 4E 75 4B EC 00 08 32 2C 00 02 53 41 70 F5 "
10410 DATA " 0C 15 00 FD 58 8D 57 C9 FF F8 66 06 2B 05 53 54 70 00 4E 75 1C 28 "
10420 DATA " 00 1D 61 00 01 D4 67 46 4B E8 00 58 74 40 21 42 00 20 21 6C 00 04 "
10430 DATA " 00 24 0C 28 00 04 00 1C 67 00 00 BE 78 00 7A 00 52 45 61 00 00 DE "
10440 DATA " 66 28 4A A8 00 58 67 12 43 E8 00 32 36 19 4B E8 00 68 61 00 00 D6 "
10450 DATA " 66 E2 60 6E 4A 44 66 DC 38 05 60 D8 70 F9 4E 75 70 F5 4E 75 0C 80 "
10460 DATA " FF FF FF F6 66 7A 10 28 00 1C 6D 72 55 00 6D E6 7C 00 4A 54 67 E4 "
10470 DATA " 4A 44 67 0C 3A 04 ED 8C EF 8C 8B 4C 21 44 00 20 4B E8 00 58 2A C2 "
10480 DATA " 42 5D 42 9D 42 9D 70 12 43 E8 00 32 3A D9 51 C8 FF FC 42 9D 42 9D "
10490 DATA " 42 9D 61 6E 29 68 00 24 00 04 42 A8 00 20 21 46 00 24 31 45 00 1E "
10500 DATA " 61 5A 60 24 10 28 00 1C 6D 32 0C 00 00 02 67 1A 6E 22 22 28 00 58 "
10510 DATA " EF 89 8E 49 31 45 00 1E 21 42 00 20 21 41 00 24 70 00 4E 75 70 F8 "
10520 DATA " 4E 75 42 68 00 32 60 F2 38 05 7C 40 61 88 60 5E 78 00 61 6C ED 8D "
10530 DATA " EF 8D EE 4D 21 45 00 20 70 40 4B E8 00 98 42 A5 59 40 6E FA 60 04 "
10540 DATA " 70 03 60 02 70 07 43 E8 00 58 60 00 FC 5A B6 6D FF FE 66 0E 60 08 "
10550 DATA " 61 0C 10 01 61 08 B0 01 56 CB FF F6 4E 75 C3 4D 12 35 30 00 0C 01 "
10560 DATA " 00 61 6D 0A 0C 01 00 7A 6E 04 04 01 00 20 4E 75 61 00 FD 54 66 E0 "
10570 DATA " 28 28 00 20 21 44 00 24 53 84 48 44 52 44 3A 28 00 1E 4B EC 00 08 "
10580 DATA " 30 2C 00 02 53 40 BA 5D 66 0C B8 55 62 08 1B 7C 00 FD FF FE 52 54 "
10590 DATA " 54 8D 51 C8 FF EC 50 E8 00 2C 70 00 4E 75 48 E7 0F 8C 1C 28 00 1D "
10600 DATA " 61 4A 53 2A 00 22 4A 28 00 2C 67 28 20 28 00 24 BF 48 EE 88 43 E8 "
10610 DATA " 00 58 22 80 72 00 74 04 61 00 FC A2 2F 08 70 13 4E 41 20 5F 22 81 "
10620 DATA " 72 34 74 04 61 00 FC 90 41 E8 00 18 43 E8 01 40 34 78 00 D4 4B 92 "
10630 DATA " 4C DF 31 F0 34 78 00 C2 4E D2 48 86 E5 0B 45 EE 01 00 24 72 60 00 "
10640 DATA " 1C 2A 00 14 E5 0B 2C 33 60 3E 28 46 4B 75 2A 4B 49 ED 00 18 41 EB "
10650 DATA " 01 00 70 0F 24 18 67 18 24 42 B9 EA 00 10 66 10 B2 2A 00 14 66 0A "
10660 DATA " 4A 2A 00 22 67 08 70 F7 48 75 51 C8 FF E2 7C 00 1C 01 E5 0B 20 35 "
10670 DATA " 60 3E 67 12 42 B5 60 3E 2F 09 2F 0D 20 40 70 19 4E 41 2A 5F 22 5F "
10680 DATA " 72 00 32 19 5B 41 6F 56 41 E9 00 05 2E 08 DE 81 22 4F 55 8F 2F 0B "
10690 DATA " 9D CE 34 78 01 02 4E 92 2C 5F 32 1F BE 88 66 3E 4A 80 66 3A 3E 01 "
10700 DATA " 67 30 C2 FC 02 04 50 81 70 18 74 00 4E 41 4A 80 66 24 32 07 2B 88 "
10710 DATA " 60 3E 30 07 53 40 30 C0 30 C7 20 FC 00 00 00 40 42 98 20 FC FD 00 "
10720 DATA " 00 00 53 40 6E F6 34 01 70 00 4E 75 70 F4 4E 75 61 00 00 3A 66 2B "
10730 DATA " 57 76 98 00 66 26 2C 36 98 02 02 86 5F 5F 5F 00 00 00 30 70 00 "
10740 DATA " 4E 41 20 68 00 48 45 FA FA C0 B5 E8 00 04 67 0A 20 50 22 08 66 F4 "
10750 DATA " 70 F1 4E 75 21 46 00 26 4E 75 70 0F C0 36 B8 01 53 00 66 20 2F 0D "
10760 DATA " 4B EB 00 08 34 78 01 16 4E 92 2A 5F 66 5C 72 03 D2 76 98 00 08 81 "
10770 DATA " 00 00 D3 AE 00 18 7C 00 3C 36 18 02 DC AE 00 20 72 00 12 36 68 00 52 81 08 81 "
10780 DATA " 00 18 7C 00 3C 36 18 02 DC AE 00 20 72 00 32 36 B8 02 6B 42 87 89 D2 AE "
10790 DATA " 00 40 38 01 54 81 34 78 01 1A 4E 92 22 6E 00 58 DC 44 53 89 1D B6 "
10800 DATA " 68 00 98 00 53 86 51 CC FF F4 53 89 42 36 98 00 70 00 4E 75 "
```

BBS Guide—Continued from Page 6

Once connected, the BBS will send its standard "welcome" message. It will be 32 colmuns wide, so that people using TV sets as monitors can read it. If you get lines of garbage on the screen, you're modem is mis-set. Check the bit and parity settings and modem speed. The BBS will then ask you to press your "ENTER" or "RETURN" key so you can log-in.

The BBS will ask you for your name. Type in your name as you want to be known by on the BBS. Any character, spaces, or punctuation is acceptable. It's a good idea to use the same name on every call, but not mandatory. Be sure to type in everything on one line! Hit "RETURN" or "ENTER" after typing in your name. The BBS will log your call and display it's main menu.

You'll have several choices from the main menu. To select a command, type the first letter of the command (upper or lower case), followed by ENTER or RETRUN. Your choices will be:

essage Base Bulletin - Read the current bulletin message.

ead a Message - Read one or more messages in the message base.

(W>rite a Message - Write a message into the message base.

hat with Sysop - Pages the SYSOP. You'll be able to "talk" with him directly via the keyboard IF THE SYSOP IS AVAILABLE!

oggle Line Feeds - Some terminal programs need a carrige return AND a line feed at the end of each line. If you have problems with text not wraping properly, try changing this setting.

lter Line Length - The BBS starts out with a 32 column display, compatible with T/S-1000's and some 2068 terminal programs. If you can display a wider screen, select this option. The BBS will ask you to enter a new screen length.

oodby (Logoff) - This command ends your session and disconnects you from the BBS.

There are a few "tricks" to the <R>ead and <W>rite commands. Messages are numbered sequentially as entered, and can be read <F>orward or in <R>everse order. The BBS will tell you the numbers for the first and last messages so you can specify where to begin reading. After displaying the first message, the BBS will ask you if you want to "<S>croll, <N>ext, or

To be concluded next month

THE CLASSIFIEDS

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Not much else. I'm still awaiting the QL emulator for my Atari ST and hoping for a peek at the new Desktop Publisher. Have a Merry Christmas and a Happy New Year.
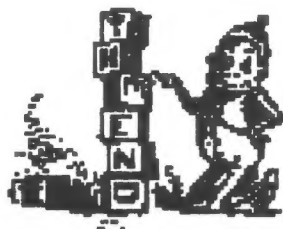
specific set-ups is this flexibility to use it with almost any computer.

Most of the big T/S dealers, such as Sharps and Curry Computers, should be able to supply T/S-specific hardware and software. Also check the ads in the various T/S publications, especially TIME DESIGNS.

Editors note: Steve is our point man when it comes to bulletin boards and telecomuting in general. If you have any comments, suggestions, or questions, get in touch with him.

A CHRISTMAS WISH-LIST OF 2088 DISK UTILITIES FOR ALL DISK SYSTEMS!

1. A "Finder" program that would locate machine-code based mass- storage access commands and provide code substitutions for disk users. Many of the more sophisticated programs (such as ART STUDIO) which are pure machine-code are not "convertible" to disk.

2. A "SAVE emulator", similar to the QL's "flp_use mdv" command, a relocatable m/c routine that would automatically convert programs to disk-based storage. HOW ABOUT IT, SANTA? WE'VE BEEN GOOD! HONEST.!

The Capital Area Timex Sinclair Users Group
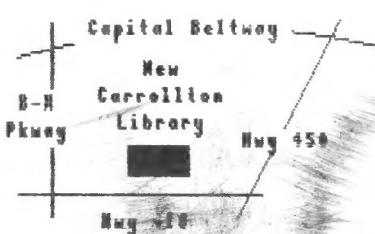
is a not-for-profit group devoted to serving the interests of those who own, use, or are interested in the Timex/Sinclair family of computers.

Executive Board

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CATS maintains a gratis exchange of newsletters with approximately 30 users groups across the U.S. Clubs not sending us a n/l for six months are automatically taken off the list.

Meetings

Monthly meetings are held from 11 AM to 4:30 PM, on the second Saturday of each month, at the New Carrollton Public Library.

Newsletter

Memberships cost $18 per year, are good for 12 months, and include all privileges (access to libraries, group buys, etc.). A newsletter subscription only is available for $12 per year.

Networks

Timex SIG on Compuserve: Wednesday night, 10 P.M. Eastern time (GO CLUB).
MSX BBS: (505) 522-7081 FIDO net 15, node 6. East Coast dial (EOL) 547-4815 FIDO net 18, node 9.

CATS Newsletter
P.O. Box 467
Fairfax Station, VA 22039

Capital Beltway
New Carrollton Library
B-W Pkwy
Hwy 450
Hwy 410

The next meeting of CATS will be held on:

Saturday, December 10, 1988   11:00 AM Hardware Workshop
12:00 CYA Workshop   2:00 PM General Meeting

At: New Carrollton Public Library
7414 Riverdale Road (Hwy 410), New Carrollton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECEIVE

DUES: $18 per year, per family